

In the Claims

The following Listing of Claims replaces all prior versions in the application:

LISTING OF CLAIMS

1. (Original) A processing circuit for a spectrometry chain including a particle radiation detector (21), including a charge preamplifier stage (20) receiving a pulsed current (I1) from the detector, representative of the amount of charges emitted by a particle which has interacted with the detector, an integrator stage (26), a differentiator stage (25) connected to the charge preamplifier stage (20), the differentiator stage (25) receiving a signal (V1) from the charge preamplifier stage (20) and delivering to the integrator stage (26), a signal (V2), image of the detector current (I1), the integrator stage (26) delivering an image (V3) of the amount of charges emitted by a particle which has interacted with the detector, characterized in that the integrator stage (26) is formed with an integrator which cooperates with means (28, 29, SW'1, SW'2) for controlling the integration time substantially during the duration of each pulse of the detector current, the differentiator stage (25) being directly connected to the assembly formed with the integrator and means for controlling the integration time, the differentiator stage (25) and the assembly forming a band-pass filter with self-adaptive time constants.
2. (Original) The processing circuit according to claim 1, characterized in that the charge preamplifier stage (20) includes a discrete or integrated amplifier (A'1) mounted as a current integrator.
3. (Original) The processing circuit according to claim 1, characterized in that the differentiator stage (25) includes an operational amplifier (A') mounted as a differentiator.
4. (Original) The processing circuit according to claim 1, characterized in that the integrator stage (26) includes an operational amplifier (A'2) mounted as an integrator.
5. (Currently amended) The processing circuit according to claim 1, characterized in that the means for controlling the integration time include a first switch (SW'1) inserted between the

integrator and the output of the differentiator stage (25), a second switch (SW'2) for resetting the integrator to zero, a logic circuit (28) for controlling the switches, a comparator (2429) for enabling the logic circuit (28) according to the result of a comparison between the signal, image of the detector current (B2), and a threshold (s').

6. (Previously presented) A spectrometry chain including a particle radiation detector (21), characterized in that it includes downstream from the detector (21), a processing circuit according to claim 1.

7. (Original) The spectrometry chain according to claim 6, characterized in that it includes a circuit for acquiring (27) the signal (V3) delivered by the integrator stage (26) of the processing circuit, this acquisition circuit (27) including an analog/digital converter (27.2) followed by a memory (27.1).

8. (Original) The spectrometry chain according to claim 7, characterized in that a signal (ACT) delivered by the logic circuit (28) conditions the acquisition time.

9. (Original) The spectrometry chain according to claim 6, characterized in that the detector (21) is inserted with a resistor (R'p) into a divider bridge circuit.

10. (Original) The spectrometry chain according to claim 6, characterized in that the detector (21) is a semiconductor detector.

11. (Original) The spectrometry chain according to claim 10, characterized in that the semiconducting material is selected from the group comprising CdZnTe, CdTe:Cl, CdTe:In.

12. (Previously presented) A spectrometry chain including a particle radiation detector (21), characterized in that it includes downstream from the detector (21), a processing circuit according to claim 5.